UNIVERSITY OF MARYLAND
INSTITUTE FOR HEALTH COMPUTING
MPOWERING THE STATE

UM-IHC INNOVATIONS

A Clinical Support Tool That Uses AI to Automatically Flag Undiagnosed Pulmonary Hypertension

PROJECT LEADERS:
Bradley Maron, M.D.
UM-IHC Co-Executive Director
Melvin Sharoky, MD Professor of Medicine and Senior Associate Dean for Precision Medicine
University of Maryland, Baltimore

Katarina Zeder, M.D., Ph.D.
Research Associate
UM-IHC and the University of Maryland School of Medicine

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CONTACT US:
To learn more, request a demonstration and find out how to access this tool, email ihc@umd.edu.

WHAT IS THE TECHNOLOGY?

Researchers at the University of Maryland Institute for Health Computing (UM-IHC) developed an artificial intelligence (AI)-powered clinical support tool to help identify patients with pulmonary hypertension (PH) using information already in the electronic health record (EHR). The tool uses large language models and machine learning to review clinical data, flag and fill in absent information, and support a more accurate diagnosis.

WHAT PROBLEM DOES IT SOLVE?

Pulmonary hypertension is a potentially life-threatening disease that can be difficult to identify, especially for nonspecialist physicians or when diagnostic data from right-heart catheterization (RHC) procedures are absent from the EHR. This tool automatically addresses information gaps and supports an earlier, more accurate PH diagnosis.

HOW WAS IT DEVELOPED?

Using clinical data from the University of Maryland Medical System (UMMS), UM-IHC researchers and partners analyzed nine years of RHC studies and found major differences in how results were reported along with a PH underdiagnosis rate of up to 5%—a figure that is higher in other health systems.

In response, the team developed an automated AI-driven approach that can locate and summarize key information from diagnostic reports in the health record and reliably estimate absent diagnostic values using machine learning methodology. In the next iteration, the program will automatically alert clinicians of new findings to spur patient engagement with a PH specialist, when applicable, for the most accurate diagnosis.

WHAT IMPACT WILL IT HAVE?

This novel clinical support tool lends automatic support to clinicians in diagnosing PH quickly and accurately. By helping identify at-risk patients and connecting them with appropriate specialists sooner, it has the potential to significantly improve care and health outcomes.

ABOUT THE UM-IHC:
The UM-IHC is the hub for health computing innovation and collaboration in Montgomery County, Maryland. Merging computational, clinical and biomedical expertise, our researchers are committed to improving the health of Maryland residents and advancing the state's biotech industry. The UM-IHC is a signature initiative of the University of Maryland Strategic Partnership: *MPowering the State* funded by MPower and Montgomery County.

For more information, visit ihc.umd.edu.

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